



Independent Review Panel

Statewide Assessment of Gas Pipeline Safety

Conducted on Behalf of the Department of Public Utilities
The Commonwealth of Massachusetts

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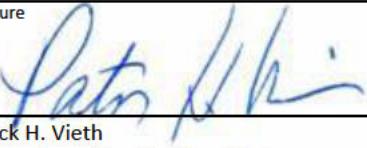
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Revision Log

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0	October 11, 2018	

Signatures

Prepared for	Department of Public Utilities (DPU) Within Executive Office of Energy and Environmental Affairs (EEA) Commonwealth of Massachusetts
Prepared by	Signature  Patrick H. Vieth Partner, Executive Vice President

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Executive Summary

Dynamic Risk Assessment Systems, Inc. (Dynamic Risk), and our proposed Panel of recognized industry experts, welcome the opportunity to provide this proposal to the Department of Public Utilities (DPU), Executive Office of Energy and Environmental Affairs (EEA) for the Commonwealth of Massachusetts. In order to meet the objectives outlined by the DPU, Dynamic Risk has proposed assembling an Independent Review Panel ('Panel') that will be comprised of the following recognized experts that bring unique and diverse expertise:

- Patrick Vieth brings over 30 years of experience in pipeline safety and reliability assessments, and the leadership experience to lead this complex and multi-faceted project.
- Elizabeth Herdes brings experience of leading and supporting many safety assessments, and relies upon her expert consultant and energy law background.
- Jim Howe brings the deep utility experience gained from working with two of the largest utilities in North America.
- Todd Conklin brings a unique perspective for organizational and safety culture and human performance.
- Chris Hart brings a government agency perspective as immediate past Chairman of the National Transportation Safety Board.

This Panel, along with a well-qualified and experienced technical support team, will provide the DPU with the required resources and expertise to meet the objectives of this project in an expedited manner.

We collectively recognize the importance of this project and the expectation to provide a transparent assessment that enhances public trust and confidence in the work product(s). In order to continue building this public trust, we have proposed establishing three (3) stakeholder groups; Affected Stakeholder Group, External Stakeholder Engagement Group, and Industry Advisory Group. The active engagement of these stakeholder groups will ensure that public trust and confidence is enhanced throughout this process.

In order to meet the expected timelines proposed by the DPU, we have provided a phased approach to achieve the project objectives. In Phase 1, a program level assessment and evaluation of each Company will be performed, and will review and assess the identified focus areas. The results from Phase 1 will be delivered within 120 days and will provide the findings, conclusions and recommendations for a prioritized Phase 2. In Phase 2, field site visits will be performed to further evaluate the focus area programs. This will include, and is not limited to, performing several interviews.

Contents

Revision Log	ii
Signatures	ii
Executive Summary.....	iii
1 Introduction	6
2 Response Submission Requirements.....	6
3 Objective	7
4 Scope.....	7
5 Independent Review Panel	7
• <i>Patrick H. Vieth</i>	8
• <i>Elizabeth B. Herdes</i>	8
• <i>Jim Howe,</i>	8
• <i>Todd Conklin</i>	8
• <i>Christopher A. Hart</i>	8
6 Stakeholder Engagement.....	8
• <i>Affected Stakeholder Group.</i>	8
• <i>External Stakeholder Engagement Group</i>	8
• <i>Industry Advisory Group.</i>	8
7 Approach.....	9
8 Deliverables, Schedule, Cost and Level of Effort	9
9 Appendix A - Scope of Services.....	11
10 Appendix B - Bidder Submission Form.....	13
B.1 Bidder General Information	13
B.2 Designated Contract Manager	14
B.3 Bidder Expertise and Experience.....	14
B.4 All-inclusive hourly rates for each Staff Member who will provide Services	14
B.5 Proposed Blended Rate	15
B.6 Certification.....	16
11 Appendix C - Bidder Expertise and Experience.....	17
C.2 State and Federal Gas Regulations and Statutes.....	18

C.3	Operation, Maintenance and Repair of Gas Pipeline Infrastructure	19
C.4	Large-scale Gas Pipeline Safety Assessments.....	21
C.5	Audits of Policies and Procedures	22
12	Appendix D - Description of Proposed Methodology for Conducting Statewide Assessment	23
D.1	Project Execution Plan	24
D.2	Review and Assessment Guidelines	25
D.3	Codes and Standards.....	26
D.4	Prioritization of Project Execution	27
D.5	Relevant Work Product	28
13	Appendix E - Conflicts Disclosure.....	29
E.1	Request	29
E.2	Response.....	29
14	Appendix F - Completed Bidder Reference	31
15	Appendix G - Resumes for all staff who will be engaged in this project	32
•	<i>Patrick H. Vieth</i>	32
•	<i>Elizabeth B. Herdes</i>	32
•	<i>Jim Howe</i> ,	32
•	<i>Todd Conklin</i>	32
•	<i>Christopher A. Hart</i>	32
16	Appendix H - Estimated Level of Effort and Costs	35
17	Appendix I - Abbreviations.....	37
18	Appendix J - Supplier Diversity Program (SDP) Plan Commitment, SDP Plan Form #1	38
19	Appendix K – Dynamic Risk Certified as Minority Owned	39

1 Introduction

The Department of Public Utilities (DPU) within the Executive Office of Energy and Environmental Affairs (EEA) for the Commonwealth of Massachusetts has requested this proposal from Dynamic Risk Assessment Systems, Inc. (Dynamic Risk) to conduct an independent statewide examination of the safety of the Commonwealth's gas distribution systems.

This proposed comprehensive technical assessment will assess gas pipeline safety throughout the Commonwealth to evaluate the integrity of the gas distribution system on a statewide basis and make recommendations for improvements. In addition to this technical assessment, this project must be executed with transparency and stakeholder engagement that build and enhances public trust and confidence in the work product(s) produced by this assessment.

To meet the objectives of this project, Dynamic Risk is proposing to form an Independent Review Panel ('Panel') to serve as the Evaluator. This Panel is comprised of recognized experts that bring the diverse expertise required for the successful execution of this project. This Panel will look at each Company as outlined by the assessment and review process (Appendix D) to identify potential gaps and areas for improvement that will lead to improved safety and reliability.

2 Response Submission Requirements

As per the Request for Response, the following eight (8) components specific to this RFR must be included with the response:

Required Document	Location within Dynamic Risk Proposal
The Scope of Services (Scope) for this project	Appendix A
Bidder Submission Form	Appendix B
Bidder Expertise and Experience	Appendix C
Description of Proposed Methodology for Conducting Statewide Assessment	Appendix D
Conflicts Disclosure form	Appendix E
Completed Bidder Reference form	Appendix F
Resumes for all staff who will be engaged in this project for DPU	<ul style="list-style-type: none">• Brief Biographies in Appendix G• Full resumes submitted under separate cover
Supplier Diversity Program (SDP) Plan Commitment, SDP Plan Form #1 (as directed in RFR Appendix 3, Section 8.5, to be submitted with initial proposal)	Appendix J

3 Objective

Conduct an independent statewide examination of the safety of the Commonwealth's gas distribution system performed by a third-party evaluator (the "Evaluator"). The examination will assess gas pipeline safety throughout the Commonwealth to evaluate the integrity of the gas distribution system on a statewide basis and make recommendations for improvements.

Note: The examination will complement, but not duplicate, the investigation led by the National Transportation Safety Board, which is focused on the September 13, 2018 gas incident in Merrimack Valley and its potential causes.

4 Scope

The Evaluator will examine the following areas:

- 1) the physical integrity and safety of the Commonwealth's gas distribution system; and
- 2) the operation and maintenance policies and practices of the Commonwealth's seven investor-owned gas distribution companies and four municipal gas companies, with respect to the Commonwealth's gas distribution system.

More specifically, the Companies ('Companies') that will be assessed are listed below and these companies maintain over 9,800 miles of main and over 1,300,000 services.

Company Name	PHMSA ID
Investor-Owned Local Distribution Companies (10)	
Columbia Gas of Massachusetts (Bay State Gas Company)	01209
Berkshire Gas Company	01344
Blackstone Gas Company	01504
Eversource Energy (NSTAR Gas Company)	02652
Liberty Utilities (New England Natural Gas Company)	31770
Boston Gas Co (National Grid)	01640
Essex County Gas Co (National Grid)	04547
Colonial Gas Co - Lowell Div (National Grid)	11856
Cape Cod Gas Co (Div Of Colonial Gas Co) (National Grid)	02066
Unitil (Fitchburg Gas and Electric Light Company)	05200
Municipal Gas Companies (4)	
Holyoke Gas & Electric	07330
Middleborough Gas & Electric	12444
Wakefield Municipal Gas & Light	22035
Westfield Gas & Electric Light	22511

5 Independent Review Panel

In order to meet the objectives of this project, an Independent Review Panel ('Panel') will be established to serve as the Evaluator. This Panel is comprised of recognized experts that bring the

diverse expertise required for the successful execution of this project. The Panel will be comprised of the following:

- **Patrick H. Vieth, BSc ME, ASME Fellow** (Partner, Executive Vice President, Dynamic Risk). Mr. Vieth brings over 30 years of experience related to pipeline safety and reliability assessments. Mr. Vieth is past Chair of the ASME Pipeline Systems Division, Chair of the Board for the International Pipeline Conference Foundation, and past vice Chair of the ASME Pipeline Standards Committee (B31.4). Mr. Vieth has significant experience in leading multi-disciplined teams focused on solving some of the most complex challenges faces by the pipeline industry. Patrick will serve as the Lead Evaluator for this Panel.
- **Elizabeth B. Herdes**, Esq. (Herdes Law & Consulting, PC). Ms. Herdes is a highly accomplished expert consultant and energy lawyer focused on assisting operators, and the communities they serve, assess and enhance the safety of natural gas and crude oil pipelines.
- **Jim Howe, PE**. Mr. Howe brings over 40 years of diverse utility experience, including senior leadership roles in the operation of two of the largest natural gas transmission and distribution systems in the US. He has particular experience in organizational response to a major incident and implementation of safety management systems.
- **Todd Conklin, PhD**. Dr. Conklin spent 25 years at Los Alamos National Laboratory as a Senior Advisor for organizational and safety culture and brings particular expertise related to human performance.
- **Christopher A. Hart** (Founder, Hart Solutions LLC). Christopher A. Hart is an American lawyer, government official, and pilot. He served as the 13th chairman of the National Transportation Safety Board. Chris will serve as an Advisor to the Panel.

Additional details regarding the expertise of this Panel are provided in [Appendix G](#) and resumes for each are provided under separate cover.

6 Stakeholder Engagement

This Panel recognizes the critical importance of technical and operational experience required for assessing the system integrity of these gas distribution systems to improve public safety. In addition, this Panel recognizes the critical need to build and enhance trust and confidence of all stakeholders including but not limited to the general public and government agencies. In order to ensure the highest level of public trust, we will establish three (3) groups:

- **Affected Stakeholder Group**. This will be a diverse group of affected stakeholders, including local, state or federal officials; representatives from the Commonwealth's gas companies; labor representatives; and residents as part of the information gathering phase of this project.
- **External Stakeholder Engagement Group**. This group will be comprised of select external stakeholders (e.g., elected officials, first responders, government agencies, general public) to ensure that the Panel considers input from all stakeholders throughout the course of the assessment. It is envisioned that five (5) Industry leaders will serve on this group.
- **Industry Advisory Group**. This group will be comprised of select Executives from natural gas pipeline operators, key pipeline industry associations and/or experts working in complex operations in other industries such as nuclear power and commercial aviation. It is envisioned that five (5) industry leaders will serve on this group.

None of these groups will be paid resources and will not be authors of the Panel's Final Report or its findings. It is envisioned that these groups will be engaged by the Panel on an ad-hoc basis that will typically occur via teleconference. Information provided by these groups will be considered by the Panel in its assessment and will be treated as Business Confidential. Non-disclosure agreements will be executed by group members, as appropriate, to ensure appropriate confidentiality. Terms of reference will be established for each group as part of its formation.

The Panel also recognizes the critical importance of creating a work product that not only presents the results of the detailed technical assessment, but also presents the results in appropriate context for all stakeholders. The ability to effectively communicate complex technical assessments and results to generally non-technical stakeholders is well recognized by this Panel, and will be considered in the production of any work product.



7 Approach

The methodology proposed for executing this project will be a phased approach. The detailed tasks incorporating each Phase will be developed in collaboration with the DPU and EEA to ensure that critical timelines and deliverables are well understood and reflected in the final Work Plan. A summary of Phase 1 and Phase 2 is provided below, and details for this approach are discussed in detail in Appendix D.

Phase 1. In Phase 1, a program level assessment and evaluation of each Company will be performed to review and assess the focus areas identified. The results from Phase 1 will provide the recommendations for a prioritized Phase 2.

Phase 2. In Phase 2, field site visits will be performed to further evaluate the focus area programs. This will include, and is not limited to, performing several interviews where Chatham House rules will apply.

Stakeholder Engagement. Three (3) focus groups will be established, along with appropriate terms of engagement, to ensure stakeholders are provided the opportunity to provide direct input to the Panel throughout the assessment process.

8 Deliverables, Schedule, Cost and Level of Effort

Supporting details for the deliverables, schedule and cost estimate are provided as follows:

Deliverables and Schedule

The deliverables for this project are described in [Appendix D](#) and will include the following:

- Monthly Progress Report (10th day of each month)
- Phase 1 Presentation and Preliminary Report by February 28, 2019
- Phase 2 Presentation and Final Report by June 30, 2019.

Cost and Level of Effort

The estimated level of effort and cost to complete Phase 1 and Phase 2 is described below and the details are provided in [Appendix H](#).

- Phase 1. The estimated level of effort to complete Phase 1 by February 28, 2019 is 1,824 staff hours and equates to approximately 2.8 full-time equivalents over this time period. The estimated cost for Phase 1 is \$822,796 and includes estimated travel costs of \$38,000.
- Phase 2. The estimated level of effort to complete Phase 2 by June 30, 2019 is 2,092 staff hours that equates to approximately 3.2 full-time equivalents over this time period. The estimated cost for Phase 2 is \$907,648 and includes estimated travel costs of \$28,000 and a management fee 12% that covers subcontractor engagement costs and project administrative management.
- The total estimate for Phase 1 and Phase 2 is \$1,730,444.
- Stakeholder Engagement. Dynamic Risk and our Panel of experts recommends dedicated resources for stakeholder engagement. The estimated level of effort and cost for this is \$259,840 for Phase 1 and Phase 2.
- The total estimate for Phase 1 and Phase 2 including Stakeholder Engagement is \$1,990,284.

9 Appendix A - Scope of Services

The scope of services as provided in the Request for Response (RFR) is provided herein verbatim.

The third-party evaluator (the “Evaluator”) chosen under this RFR will conduct an independent statewide examination of the safety of the Commonwealth’s gas distribution system. The examination will assess gas pipeline safety throughout the Commonwealth to evaluate the integrity of the gas distribution system on a statewide basis and issue a report summarizing all findings and making recommendations for improvements.

The questions that DPU seeks to answer through this engagement are as follows:

Physical Integrity of the Statewide Gas Distribution System

- 1) Are the gas distribution companies’ respective system designs of low/medium/high pressure mains and associated service lines compliant with applicable federal and state regulations?
- 2) Are there weaknesses or deficiencies (e.g., leaks, corrosion, asset condition, etc.) in the distribution system, and if so, what are recommendations for system changes? Are the gas distribution companies already addressing these changes pursuant to law, policy or regulation?
- 3) Based on a representative sample of site inspections, are there any additional distribution system weaknesses or deficiencies not otherwise identified through an assessment of system design?
- 4) Is the current inspection and replacement work optimized to properly manage risk?

Operation and Maintenance Policies and Practices of Gas Distribution Companies

- 1) What is the current level of adoption of best industry safety management practices, including API RP 1173, and what is the overall commitment to integrating safe practices in all distribution system operations and maintenance?
- 2) How adequate are the gas distribution companies’ written operation and maintenance policies and procedures for their respective distribution systems, including policies and procedures for pipeline construction safety protocols and incident response?
- 3) Are there sufficient personnel, including inspectors, and management structures and communication protocols in place at the gas distribution companies to ensure that safety and incident response protocols can be operationalized in all circumstances, including catastrophic situations?
- 4) What is your assessment of the operating pressure of each gas distribution company’s system and its flow rates, including maximum allowable operating pressure, any restrictions in pressure, flow and capacity, and the adequacy of response procedures in the event of abnormalities?
- 5) What is each gas distribution companies’ degree of compliance with the Dig Safe statute, including compliance with notifications and inspections for pipeline construction?
- 6) Does the company keep effective records, including system maps, in such a way to complement all safety and incident response protocols?

- 7) Are there weaknesses or deficiencies in (a) any of the operation and maintenance policies, procedures and practices evaluated or, (b) the ability to operationalize policies and procedures in all circumstances, and if so, what are recommendations for improvement?

Based on a representative sample of site inspections, are there any additional weaknesses or deficiencies not otherwise identified through an assessment of written policies and procedures?

If approved by DPU, the Evaluator will conduct such additional or different areas of investigation deemed necessary to more effectively achieve the overall goal of evaluating: (1) the physical integrity and safety of the Commonwealth's gas distribution system; and (2) the operation and maintenance policies and practices of the Commonwealth's gas companies. The Evaluator shall also solicit and gather input from a diverse group of affected stakeholders, including local, state or federal officials; representatives from the Commonwealth's gas companies; labor representatives; and residents as part of the information gathering phase of this project.

The Evaluator may conduct the assessment in phases, provided that an initial report of findings is produced within 90 to 120 days of Contract execution. DPU reserves the ability to negotiate a final scope of work, which includes a phased approach based on subject matter, region, or other criteria.

10 Appendix B - Bidder Submission Form

The Request for Response (RFR) requires six (6) components:

- Bidder Submission Form, (Appendix B)
- Bidder Expertise and Experience (see Appendix C)
- Proposed Methodology for Conducting Statewide Assessment (see Appendix D)
- Conflicts Disclosure form (see Appendix E)
- Completed Bidder Reference form (Appendix F)
- Resumes for all staff who will be engaged in this project for DPU. Bidders should also indicate the extent to which each individual has familiarity with specific topics or areas of specialization that may be relevant for this engagement. (Appendix G has brief biographies, and resumes are submitted under separate cover)

In addition to these required components, we have also included the following:

- Supplier Diversity Program (SDP) Plan Commitment, (Appendix J)
- Dynamic Risk Certified as Minority Owned (Appendix K)

The response to these requirements are summarized below.

B.1 Bidder General Information

Company Information	
Company name	Dynamic Risk Assessment Systems, Inc.
Street address, city, state, zip	Suite 1110, 333, 11th Avenue SW Calgary, AB, Canada T2R 1L9
Main phone number	403.547.8638
Website	https://dynamicrisk.net

This project will be led and executed from Dynamic Risk's Houston-based office at:

10001 Woodloch Forest Drive
Suite 250
The Woodlands, TX 77380
Main Phone: 832.482.0606

B.2 Designated Contract Manager

Bidders must provide the contact information requested below for the designated Contract Manager who will be responsible for the overall management, reporting and for ensuring adherence to the performance measures of this contract during normal business hours.

Company Information	Use this column for the answer
Name, Title	Trevor MacFarlane President & CEO Dynamic Risk Assessment Systems, Inc.
Phone number (office and mobile, if available)	403.547.8638 (Main) 403.245.5800 (Direct)

B.3 Bidder Expertise and Experience

Please see [Appendix C](#).

B.4 All-inclusive hourly rates for each Staff Member who will provide Services

These hourly rates are inclusive of all applicable payroll taxes. Reasonable travel costs will be invoiced at cost.

Staff Name	Position/Title	Hourly Rate	Resume Attached	Relevant Experience / Topic Area(s)
Patrick H. Vieth	Dynamic Risk	\$400	Yes	Pipeline systems, audits, compliance, safety and reliability, fitness for service
Elizabeth Herdes	Subcontractor to Dynamic Risk	\$400	Yes	Assess pipeline systems; analyze safety cultures; audit regulatory compliance, legal matters
Todd Conklin	Subcontractor to Dynamic Risk	\$500	Yes	Organizational and safety culture, human performance
Jim Howe	Subcontractor to Dynamic Risk	\$400	Yes	Utility experience, organizational response to major incident, implementation of safety management systems
Chris Hart	Subcontractor to Dynamic Risk	\$400	Yes	Government agencies, stakeholder engagement, accident investigations
Additional Resources that May Provide Technical Support to the Panel				
Benjamin Mittelstadt	Dynamic Risk	\$300	Yes	Pipeline Operations, risk and integrity management
Trevor MacFarlane	Dynamic Risk	\$350	Yes	Risk Management, Gas Pipeline utilities integrity management, Pipeline operations

Staff Name	Position/Title	Hourly Rate	Resume Attached	Relevant Experience / Topic Area(s)
Dan Williams	Dynamic Risk	\$300	Yes	Pipeline risk management, engineering assessments, fitness for service
Monica Porter	Dynamic Risk	\$230	Yes	Management systems, root cause analysis, technical program management
Phillip Nidd	Dynamic Risk	\$350	Yes	Root cause analysis, incident investigation, safety management systems
Curtis Parker	Dynamic Risk	\$300	Yes	Operations - Gas Transmission and Gas Distribution
Carl Leclercq	Dynamic Risk	\$190	Yes	Operations - Gas Transmission and Gas Distribution
Brian Griffin	Subcontractor to Dynamic Risk	\$270	Yes	Risk management for industrial operations, HAZID, HAZOP, and FMECA studies
Terri Larson	Priority Services	\$250	Yes	Communications, crisis management and public affairs
Mike Courtien	Priority Services	\$350	Yes	Project Management, Project Administration
Karen Bowes	Dynamic Risk	\$125	Yes	Project Management, Project Administration

B.5 Proposed Blended Rate

Not applicable.

B.6 Certification

Certification. Bidders must be prepared to submit signed originals of the MA Standard Contract Form, the MA Commonwealth Terms and Conditions, the MA Request for Taxpayer Identification Number and Certification (Massachusetts Substitute W-9 Form, NOT the IRS Version), and the MA Contractor Authorized Signatory Listing within ten (10) business days of notice that they have been selected for contract award.

I hereby certify that I have read the RFR “19DPUSGAMY4” and all documents referenced therein, that this proposal is in compliance with all mandatory requirements, and that all RFR specifications requiring the Bidder’s agreement, and/or the Contractor’s actions if awarded a Contract, will be met.

I am an authorized signatory of the company, and I have read and agreed with the above terms.

Name:	Trevor MacFarlane
Title:	President and CEO Dynamic Risk Assessment Systems, Inc.
Date:	October 11, 2018
Signature	